

and the nozzle body.

16. The ~~orifice~~ assembly of claim 11 further comprising a jewel defining an orifice coaxial with the ~~orifice-nozzle~~ body axis located upstream of the mixing cavity chamber.

17. The ~~orifice~~ assembly of claim 16 wherein the upstream portion of the ~~nozzle~~~~orifice~~ body defines a high pressure cavity and the jewel is disposed in a recess at in a bottom wall of the high pressure cavity.

18. The ~~orifice~~ assembly of claim 17 further comprising a soft seal adjacent an opening of the high pressure cavity to provide a sealing means between the ~~orifice~~ assembly and an inlet body.

19. The ~~orifice~~ assembly of claim 11 further comprising a soft seal located at the upstream portion of the ~~orifice-nozzle~~ body to provide a sealing means between the ~~orifice~~ assembly and an inlet body.

REMARKS

The Examiner objected that claim 3 is improper. Claim 3 has been amended to cure the problem.

The Examiner rejected the claims as being indefinite due to inconsistencies in claims 1, 3, 9, 10, 11, and 15. The Applicant has amended the claims to cure all of the inconsistencies. At the same time, the Applicant has adjusted some of the terminology in the claims to make them clearer.

All of the claims stand rejected under §102 as anticipated by Hashish et al '085. Prior to amendment, claims 1 and 11 were the only independent claims. The Applicant

has amended claim 2 to be an independent claim by incorporating all of the elements of claim 1, and the Applicant has cancelled claim 1.


The language of claim 2 that distinguishes over Hashish '085 refers to the "transition portion between the side wall and the bottom wall" which has "a generally quarter circle curvilinear sectional profile to provide a constant radius transition between the side wall and the bottom wall". This also distinguishes over all of the prior art in this art, which is ultra high pressure liquid with entrained abrasive cutting nozzles as shown by the two Hashish et al references, Chalmers, and others. Hashish et al '085 shows in figures 3 and 3a that the high-pressure cavity has a square corner at the transition from the cylindrical side wall to the bottom wall. It does not have quarter circle curvilinear section providing a constant radius transition from the side wall to the bottom wall. It does not have any kind of tapering shape to reduce turbulence. The Applicant has found that the claimed design difference reduces turbulence prior to the pressurized fluid passing through the orifice, as noted on page 2 lines 10 – 13.

Claims 3 – 10 depend from claim 2 and are therefore allowable.

Claim 11 has been amended to incorporate all of the limitations of claim 15. The essential point of novelty is the nozzle guard encircling the mixing tube and extending downstream as far as the downstream end of the mixing tube so that the mixing tube will not be broken when the nozzle head is moved and the mixing tube strikes a work piece. Such a full-length nozzle guard is not shown in the prior art. Claims 12 – 14 and 16 – 19 depend from claim 11 and are therefore allowable.

Respectfully submitted,

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